FIG. 1

A - CH₂ $C = HN_2 + CI$ Iminothiolane -O-CH₂CH--(OCH₂CH₂)₁₂₅-OH· Maleidophenyl PEG 5000

Hb surface decorated with PEG

$$\begin{array}{c} \uparrow \\ \uparrow \\ NH_2CI \\ + \end{array} \begin{array}{c} \downarrow \\ \downarrow \\ NH_2 \\ + \end{array} \begin{array}{c} \uparrow \\ \downarrow \\ NH_2 \\ + \end{array} \begin{array}{c} \uparrow \\ \downarrow \\ H \\ + \end{array} \begin{array}{c} \downarrow \\ H \\ + \end{array} \begin{array}{c} \uparrow \\ \downarrow \\ H \\ + \end{array} \begin{array}{c} \uparrow \\ \downarrow \\ H \\ + \end{array} \begin{array}{c} \uparrow \\ \downarrow \\ H \\ + \end{array} \begin{array}{c} \uparrow \\ \downarrow \\ H \\ + \end{array} \begin{array}{c} \uparrow \\ \downarrow \\ H \\ + \end{array} \begin{array}{c} \uparrow \\ \downarrow \\ H \\ + \end{array} \begin{array}{c} \uparrow \\ \downarrow \\ H \\ + \end{array} \begin{array}{c} \uparrow \\ \downarrow \\ H \\ + \end{array} \begin{array}{c} \uparrow \\ \downarrow \\ H \\ + \end{array} \begin{array}{c} \uparrow \\ \downarrow \\ H \\ + \end{array} \begin{array}{c} \uparrow \\ \downarrow \\ H \\ + \end{array} \begin{array}{c} \uparrow \\ \downarrow \\ H \\ + \end{array} \begin{array}{c} \uparrow \\ \downarrow \\ H \\ + \end{array} \begin{array}{c} \uparrow \\ \downarrow \\ H \\ \to \end{array} \begin{array}{c} \uparrow \\ \downarrow \\ \\ H \\ \to \end{array} \begin{array}{c} \downarrow \\ \\ H \\ \to \end{array} \begin{array}{c} \uparrow \\ \\ \to \end{array} \begin{array}{c} \downarrow \\ \\ \to \end{array} \begin{array}{c} \uparrow \\ \\ \to \end{array} \begin{array}{c} \downarrow \\ \\ \to \end{array} \begin{array}{c} \uparrow \\ \\ \to \end{array} \begin{array}{c} \downarrow \\ \\ \to \end{array} \begin{array}{c} \uparrow \\ \\ \to \end{array} \begin{array}{c} \uparrow \\ \\ \to \end{array} \begin{array}{c} \uparrow \\ \\ \to \end{array} \begin{array}{c} \downarrow \\ \\ \to \end{array}$$

Iminothiolane

В

γ-Mercaptobutyrimidyl-Hb

Amidination of amino group of Hb with Iminothiolane

· Eles

FIG. 2A



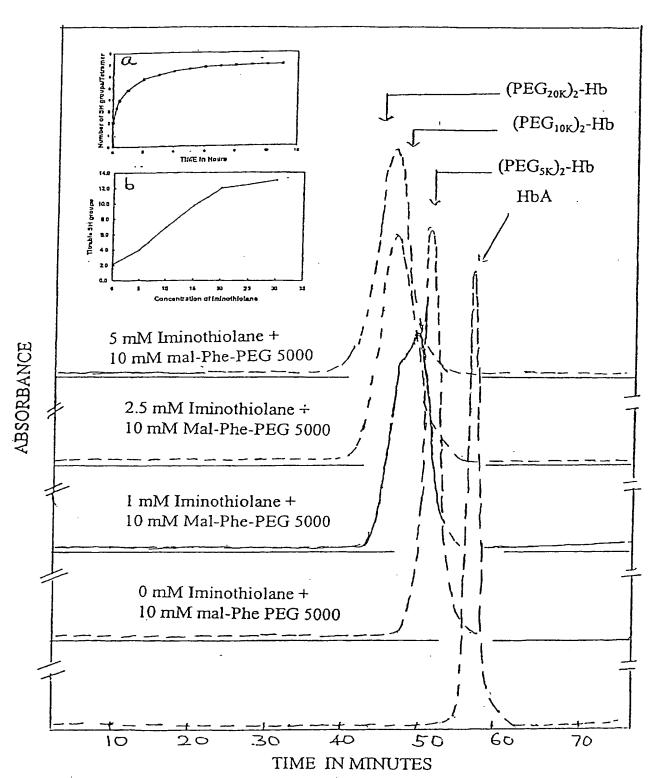


FIG. 2B

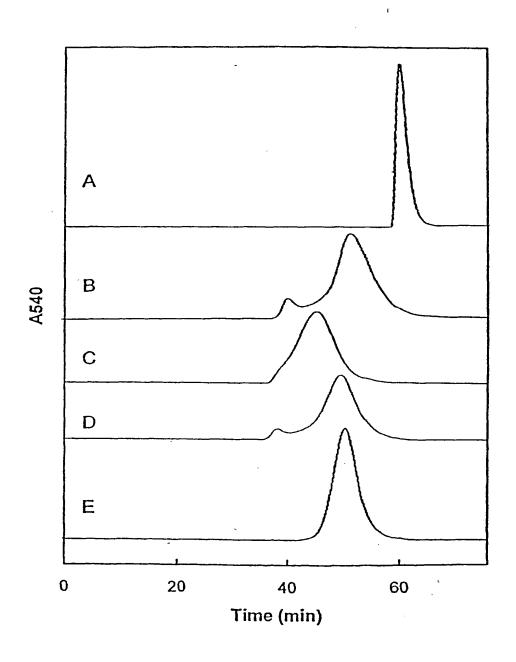
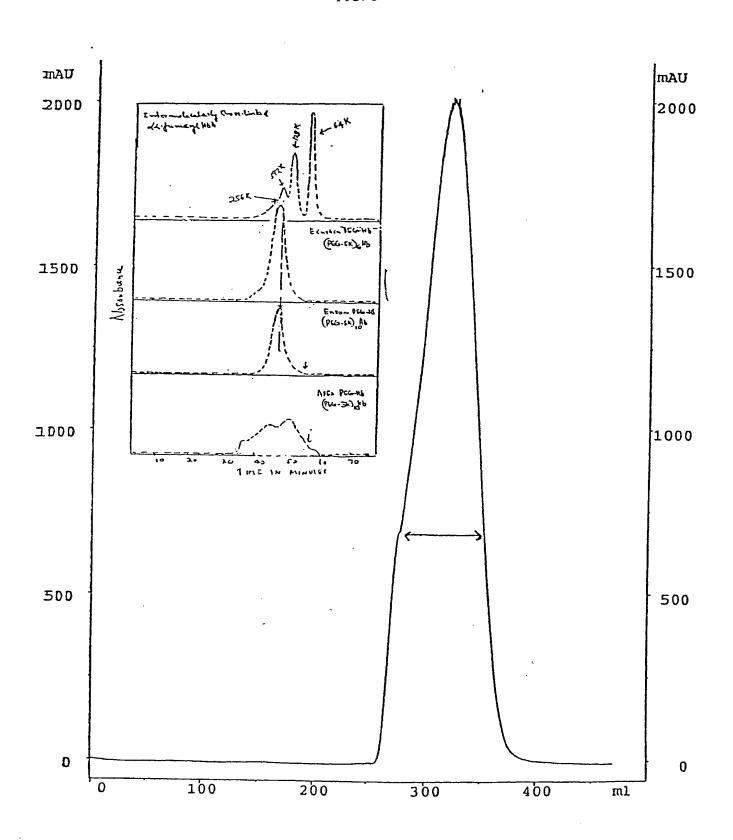


FIG. 3



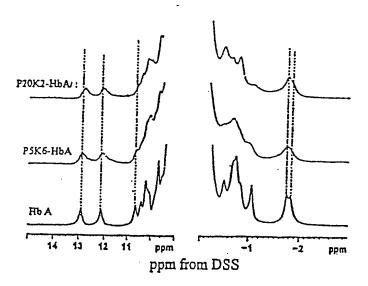
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FIG. 4

300-MHz 'H-NMR spectra of 3% solutions of Hb A, P5K6-HbA, P20K2-HbA' in the CO form [(A) and (B)] and in the deoxy form [(C) and (D)] in H₂O in 0.1 M phosphate buffer in the presence of 5% D₂O at pH7.0 and 29 °C.

A. Exchangeable Proton Resonances

B. Ring-Current-Shifted Proton Resonances



C. Hyperfine-Shifted N₆H Resonances of Proximal Histidines

D. Hyerfine-Shifted and Exchangeable Proton Resonances.

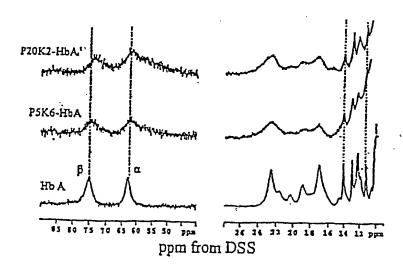
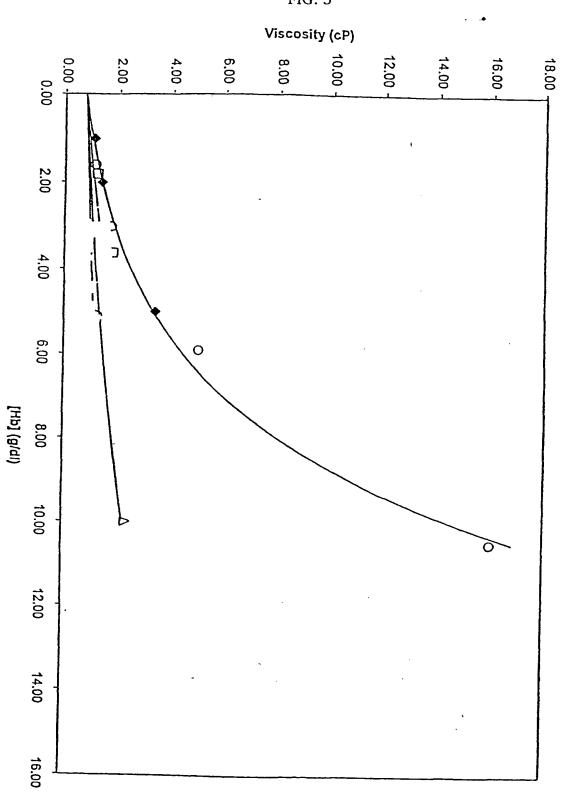


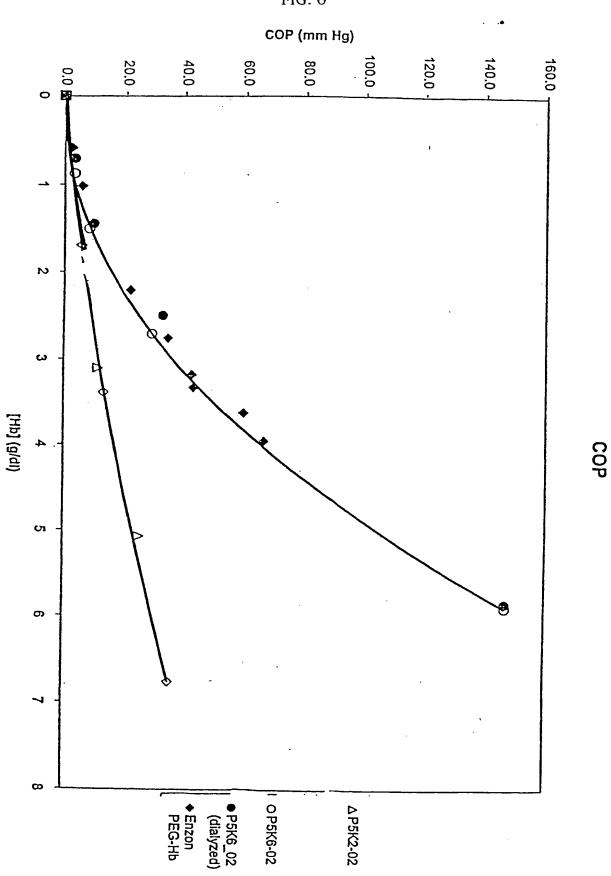
FIG. 5



VISCOSITY

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FIG. 6



5000

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FIG. 7A

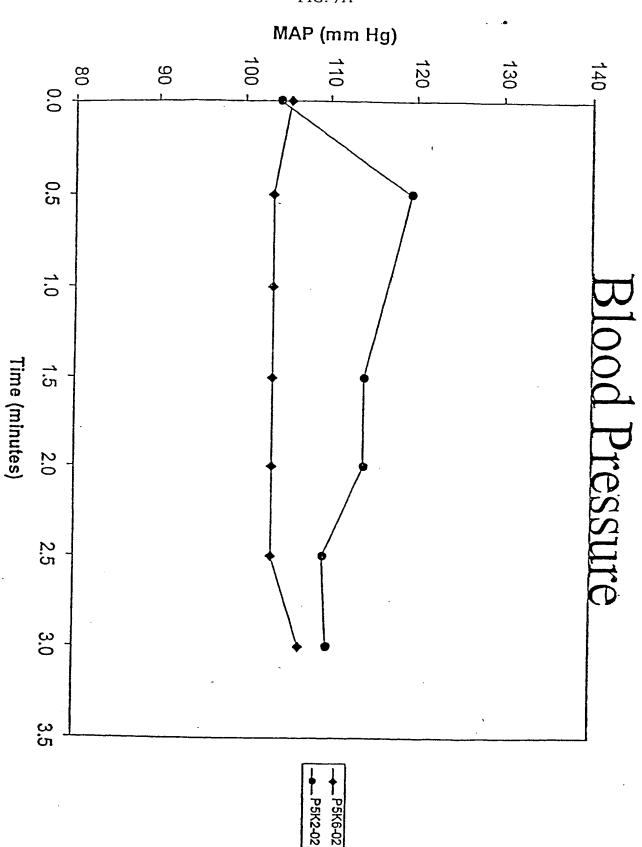
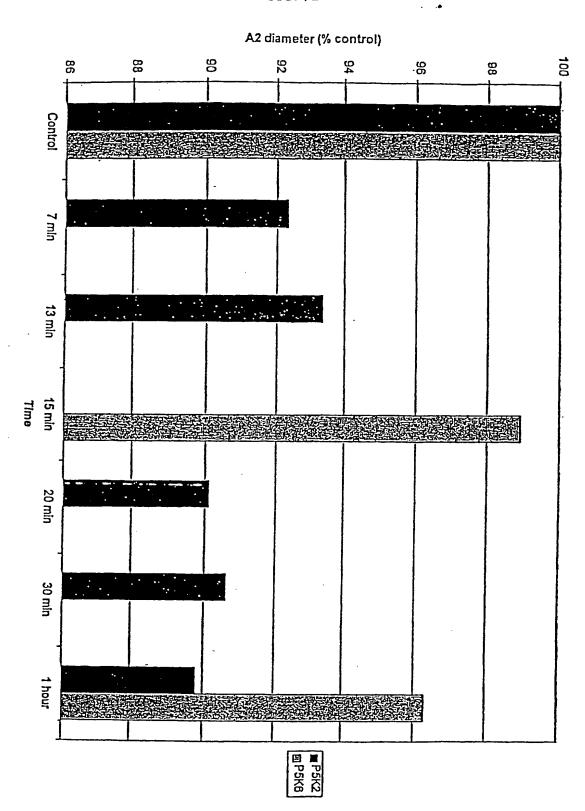


FIG. 7B



Effects of 10% top load of P5K2 (black) and P5K6 (gray) on hamster $\rm A_2$ arteriolar diameter over 1hr.

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FIG. 8

